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<th><strong>Title</strong></th>
<th>Saliva changes 1-year after intensity-modulated/conventional radiotherapy for nasopharyngeal carcinoma</th>
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<td><strong>Author(s)</strong></td>
<td>Pow, EHN; McMillan, AS; Leung, WK; Wong, MCM; Kwong, DLW</td>
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INTRODUCTION
Nasopharyngeal carcinoma (NPC) is very common among Southern Chinese people. The primary treatment of NPC is by radiotherapy because the tumour is highly radiosensitive. Salivary hypofunction is the chief oral complication following treatment and causes discomfort and an increased risk of oral diseases. Intensity-modulated radiotherapy is a novel technique which can spare the salivary glands from radiation damage. To our knowledge, no data are presently available comparing saliva changes in NPC patients after conventional and intensity-modulated radiotherapy.

OBJECTIVE
To compare quantitative and qualitative changes in saliva of nasopharyngeal carcinoma patients receiving conventional radiotherapy (CT) and intensity-modulated radiotherapy (IMRT).

MATERIALS AND METHODS

Subjects
- Double-blind, randomized design
- 29 consecutive patients newly diagnosed with NPC (T2) recruited from the Queen Mary Hospital, Hong Kong were randomized to either CT or IMRT limbs (Fig. 1-2).
- Patients who had history of chemotherapy or radiotherapy in head and neck region were excluded.

RESULTS

Saliva collection and analysis
- Stimulation with saliva (SWS): chewing of a rubber ring for 5 min
- Stimulation with parotid saliva (SPS): chewing of a rubber ring and application of 0.1% 2% citric acid at 3min intervals for 15min, collected using a Lashley cup secured over a parotid duct.
- Saliva volume, pH and buffer capacity were measured.
- Evaluation points: prior to and 2-, 6- and 12-months after treatment performed by single examiner (EHNP).

Data analysis
- Paired sample T. Wilcoxon signed ranks tests to compare changes over time
- Independent sample T. Mann-Whitney U tests to compare differences between groups.
- 5% level of significance was used

DISCUSSION
- Both treatments resulted in significant impairment of saliva quantity and quality.
- There was less reduction in SWS flow in the IMRT group.
- The IMRT group demonstrated complete recovery in SPS flow while the CT group did not.
- The impairment in SWS buffer capacity was less in the IMRT group at 2-month, however, both groups were more or less the same at the 6- and 12-month evaluation.
- The observed differences in saliva parameters between the two treatment groups were most probably due to differences in radiation dose imposed on the parotid glands.

CONCLUSION
Intensity-modulated radiotherapy for nasopharyngeal carcinoma can minimize both quantitative and qualitative impairment of salivary gland function and allow full recovery of parotid saliva flow 1-year after treatment.

REFERENCES